

**Amendment in Response to Office Action
U. S. Patent Application No. 09/924,197**

Remarks

Claims 1-23 and 25-27 remain in this application. Claim 24 has been canceled. Claims 28-53 have been withdrawn. In view of the Examiner's earlier restriction requirement, Applicants retain the right to present claims 28-53 in a divisional application.

Support For The Amendments To The Claims

The amendments to claim 1 are supported by the specification as filed, and specifically in Claim 24 and paragraphs 0025 and 0096 (for reducing expression in a target gene of a *plant* cell), in paragraphs 0042 and 0047 (for a sense or antisense targeting sequence *having at least about 80% identity* to at least a subsequence of the target gene), in paragraphs 0042 and 0048 (for a subsequence of the target gene having a length of at least about 25 nucleotides), and in paragraph 0023 (the inverted repeat is at least about 30 base pairs in length).

The amendment to claim 25 is supported by claims 24 and 25 as filed.

Finally, Applicant respectfully wishes to point out, with respect to a statement in the Office Action at page 8, lines 6-9 regarding prior art attempts to knock out gene function, it is the Applicants' understanding that this statement is intended to be specific to mammalian organisms (as is the subject of Wianny et al.), rather than organisms (such as plants) in general.

Rejection Under 35 USC §112, second paragraph

The rejection under 35 USC § 112, second paragraph, has been avoided by the amendment to Claim 1. Currently amended Claim 1 particularly points out and distinctly claims a sense or antisense targeting sequence having at least about 80% identity to at least a

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subsequence of the target gene, wherein the subsequence has a length of at least about 25 nucleotides, and is thus definite.

Accordingly, Applicants request that the rejection under 35 USC § 112, second paragraph be withdrawn.

Rejection Under 35 USC §112, First Paragraph

The rejection under 35 USC § 112, first paragraph has been avoided by the amendment to Claim 1. Currently amended Claim 1 is directed to a method of reducing expression of a target gene in a plant cell, said method being enabled by the specification.

Accordingly, Applicants request that the rejection under 35 USC § 112, second paragraph be withdrawn.

Rejection Under 35 USC §102

The rejections under 35 USC § 102 over Mette, over Baulcombe and over Waterhouse are avoided by the amendment to Claim 1, and are also respectfully traversed. Currently amended Claim 1, as well as all dependent claims, are novel and unobvious over Mette and Waterhouse.

The Examiner rejected most claims 1-6, 7, 9-11, 13-19 and 21-24 as anticipated by Mette et al. (*EMBO Journal*, vol. 18, No. 1, pp. 241-248, 1999). The Examiner asserts on page 11 of the Office action that “Mete et al. discloses methods wherein tobacco plants are transformed with a vector that comprises an inverted repeat sequence from an NOS gene and a targeting sequence”. Applicants respectfully traverse these objections based upon the Examiner’s incorrect statement (bottom of p. 2) that “The NOS promoter itself comprises and (*sic*) inverted repeat

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(see, for example, Mitra et al., *Molec. Gen Genetics* (1989), 215, p 294-299), as do other portions of the NOS gene (no length is specified for such inverted repeat and, therefore, the inverted repeat could comprise as little as two base pairs), and the claimed vectors would encompass vectors used in many different types of methods, including methods wherein a gene is overexpressed, rather than depleted.” Applicants respectfully submit that an inverted repeat, as used herein and defined herein, cannot be as short as two base pairs, as lengths for an inverted repeat are well described. The application in paragraph 0007 states that “[a]n inverted sequence repeat of about 30 to more than about 1000 base pairs is incorporated into a sense construct either 5’ or 3’ to the targeting sequence that targets the endogenous gene.” Applicants submit that in paragraph 0013, a range of lengths is appropriately specified: “[i]n another embodiment, the inverted repeat is from about 30 to about 200 nucleotides in length.” Applicants also submit that paragraph 0024 clearly specifies suitable lengths for an inverted repeat sequence: “[t]he inverted repeat is chosen from any suitable sequence, and is typically from about 30 to about 1000 base pairs in length, preferably 30 to 600 base pairs, or 30 to 200 base pairs in length. Each element of the inverted repeat is about 15 to about 500 base pairs, preferably about 15 to about 100 base pairs in length.”

Mette et al. (*EMBO Journal*, vol. 18, No. 1, pp. 241-248, 1999) do not anticipate the current invention, as they did not use an inverted repeat sequence of at least 30 base pairs. Neither did Baulcombe et al. (6,423,885) nor Waterhouse et al. (6,753,139) anticipate the current invention, as they did not use an inverted repeat sequence of at least 30 base pairs. Note that Mitra and An (*Molec. Gen Genetics* , 215: 294-299, 1989) describe an 8 base pair inverted repeat element in the NOS promoter, which is shorter than the repeat sequence elements of the presently

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claimed invention. Thus, the use of NOS gene elements by the three groups cited by the Examiner do not anticipate the instant invention, as none of the sequences used by these groups comprise or anticipate an inverted repeat sequence of the claimed invention. The Applicants further respectfully submit that the inverted repeat elements in the NOS promoter (as described by Mitra and An) are not transcribed and therefore do not represent appropriate inverted repeat sequences of the instant invention, as they are located at -140/-147 and -106/-113 relative to the start of transcription.

Accordingly, Applicants request that the rejection under 35 USC § 102 be withdrawn.

Conclusion

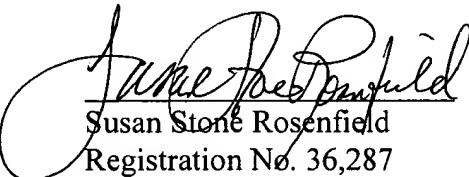
Applicants believe that no new matter is added by these amendments.

If the Commissioner determines that there is a deficiency of any fee necessary to prevent abandonment of this application, then the Commissioner is hereby authorized to charge such fee to Deposit Account No. 060590.

The Examiner is invited to telephone Applicant's undersigned representative if she believes that this would facilitate prosecution of the application.

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Respectfully submitted,


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